The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte CYRUS E. TABERY, ERIC N. PATON, BIN YU, QI XIANG, and ROBERT B. OGLE

Appeal 2007-0661
Application 10/021,782[1]
Technology Center 2800

Decided: August 14, 2007

Before KENNETH W. HAIRSTON, ALLEN R. MACDONALD, and JAY P. LUCAS, *Administrative Patent Judges*.

MACDONALD, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] Filing date: December 18, 2001. The real party in interest is Advanced Micro Devices, Inc.

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from a Final Rejection of claims 1 and 11 entered October 7, 2004[2]. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants invented a method of manufacturing a semiconductor device that reduces the total amount of fluence required to activate the source/drain regions and increases the efficiency of the laser annealing process (Specification 3:9-12).

Claims 1, 5-11, and 13 are pending. This appeal concerns claims 1 and 11. Claims 5-10 and 13 are allowed. Claims 1 and 11 are independent claims.

As best representative of the disclosed and claimed invention, claim 1 is reproduced below:

> 1. A method of manufacturing a semiconductor device, comprising the steps of:
>
> forming a gate electrode over a substrate;
>
> introducing ions into the substrate to form source/drain regions in the substrate proximate to the gate electrode;
>
> activating a portion of the source/drain regions by laser thermal annealing using a laser;
>
> moving the laser and the substrate relative to one another; and
>
> activating another portion of the source/drain regions by laser thermal annealing using the laser, wherein

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[2] An Amendment under 37 C.F.R. § 1.116 was filed on December 23, 2004, subsequent to the Final Office Action dated October 7, 2004, resulting in claims 1, 5-11, and 13 pending, with claims 5-10 and 13 allowed, and claims 1 and 11 rejected.

each pulse from the laser respectively irradiates non-identical portions of the source/drain regions, and

each portion of the source/drain regions receives more than one single pulse of energy from the laser.

The Examiner entered a Final Rejection on October 7, 2004 with the following rejections which are before us for review:

Claims 1 and 11 are rejected under 35 U.S.C. § 102(e) as being anticipated by Yamazaki.

We affirm.[3]

Throughout our opinion, we shall make reference to Appellants' Appeal Brief ("Br.") filed on March 29, 2006, and Reply Brief ("Reply Br.") filed on August 10, 2006, and to the Examiner's Answer ("Answer") mailed on July 11, 2006, for the respective details thereof.

REFERENCE

The reference relied upon by the Examiner in rejecting the claims on appeal is as follows:

Yamazaki	US 6,242,292 B1	Jun. 5, 2001

Appellants contend that with respect to Yamazaki, Yamazaki "teaches a 'two-stage irradiation' process in which a preliminary irradiation is followed by a main irradiation, and thus, each identical portion receives at least two pulses (i.e., a pulse from a preliminary irradiation and a pulse from

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[3] Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2004).

a main irradiation). Appellants contend this teaching by Yamazaki cannot be reconciled with the limitations in claims 1 and 11 that recite "each pulse from the laser respectively irradiates non-identical portions of the source/drain regions'." (emphasis in original) (Br. 4).

ISSUES

The issue is whether Appellants have shown that the Examiner erred in rejecting representative claim 1 based on anticipation. The issue specifically turns on: Whether Yamazaki expressly or inherently discloses that "*...each pulse from the laser respectively irradiates non-identical portions of the source/drain regions"*, as set forth in Appellants' claim 1 (or discloses irradiating identical portions as contended by Appellants).

FINDINGS OF FACT

The following findings of fact (FF) are supported by a preponderance of the evidence.

Claim Construction

1. The Specification discloses that "[t]he slot or slit of a laser is the surface area that is irradiated by a laser during a single pulse." (Specification, 8:1-2).

2. The Specification does not provide a lexicographic definition for the term "portion of the source/drain regions".

3. The ordinary and usual meaning of "*portion*" is, "an individual's part or share of something". *Merriam-Webster's Collegiate Dictionary,* p. 967 (11th Edition 2005).

Yamazaki

4. Yamazaki discloses "…performing an annealing by irradiating a linear laser light onto a thin film semiconductor, and forming a plurality of semiconductor devices along the longitudinal direction of an area to which the linear laser light is irradiated." (Col. 4, ll. 29-34).

5. Yamazaki further discloses that "[a] two stage irradiation is performed… as preliminary irradiation and… as main irradiation." (Col. 7, ll. 56-59).

6. Yamazaki also discloses that "…each irradiation of the first and second laser light is conducted in such a manner that an irradiation area of one pulse is partly overlapped with a next pulse…" (Col. 10, ll. 31-34).

7. Yamazaki's title sets forth a "Method Of Producing A Semiconductor Device With Overlapped Scanned Linear Lasers." (Yamazaki, Title).

8. Yamazaki discloses that the "semiconductor film is moved relative to said pulsed laser beam continuously." (Claims 130, 140, 150).

PRINCIPLES OF LAW

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim. We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction in light of the

specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004). The properly interpreted claim must then be compared with the prior art.

The Board is required to use a different standard for construing claims than that used by district courts. We have held that it is error for the Board to "appl[y] the mode of claim interpretation that is used by courts in litigation, when interpreting the claims of issued patents in connection with determinations of infringement and validity." In re Zletz, 893 F.2d 319, 321 (Fed. Cir. 1989); accord In re Morris, 127 F.3d 1048, 1054 (Fed. Cir. 1997) ("It would be inconsistent with the role assigned to the PTO in issuing a patent to require it to interpret claims in the same manner as judges who, post-issuance, operate under the assumption the patent is valid."). Instead, as we explained above, the PTO is obligated to give claims their broadest reasonable interpretation during examination. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d at 1369, 70 USPQ2d at 1834 (Fed. Cir. 2004).

ANALYSIS

For claim 11, Appellants merely repeat the same argument made for claim 1. We will therefore treat claims 1 and 11 as standing or falling with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(vii). *See also In re Young,* 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991).

Issue A: Whether Yamazaki expressly or inherently discloses that "*...each pulse from the laser respectively irradiates non-identical portions of the source/drain regions*", as set forth in Appellants' claim 1.

The Specification discloses that "the slot or slit of a laser is the surface area that is irradiated by a laser during a single pulse." (FF 1). As such, a reasonable construction of the term "portion of the source/drain regions" is the surface area that is irradiated by a single pulse. (FF 2-3).

Appellants contend that Yamazaki teaches that an identical portion of a particular source/drain region is irradiated by two or more pulses…This teaching of Yamazaki cannot be reconciled with the limitations in claims 1 and 11 that recite "each pulse from the laser respectively irradiates non-identical portions of the source/drain regions." (Br. 4-5). We disagree.

While Yamazaki discloses using a two stage irradiation process (FF 4-5), Appellants have not shown how such a two step irradiation process equates to "an identical portion" of a particular source/drain region being irradiated by two or more pulses. In an attempt to bolster this position, Appellants contend that "because stripes are necessarily formed, it is readily apparent that Yamazaki does not disclose continuous movement of the substrate relative to the laser" (emphasis in original)(Reply Br. 2:12-13). Again, we disagree.

For example, Yamazaki expressly discloses that the semiconductor film is continuously moved relative to the pulsed laser beam. (FF 8). Furthermore, Yamazaki discloses that each irradiation performed by the first and second laser (i.e., two stage irradiation) is conducted in such a manner that an irradiation area (i.e., a portion of the source/drain region) of one pulse is partly overlapped with a next pulse (FF 6-7).

In other words, Yamazaki discloses a continuously moving semiconductor film that receives "partly overlapped" pulses from the lasers from one pulse to the next. (FF 6)

In addition, Appellants state that "Independent claims 1 and 11 both recite that 'each pulse from the laser respectively irradiates non-identical portions of the source/drain regions.' This feature is illustrated, for example, in Fig. 3 of Appellants' disclosure, which shows pulses 1-5 impinging on non-identical portions of the substrate 100." (emphasis in original) (Br. 4:1-4). As such, Appellants admit that Fig. 3 of Appellants' disclosure illustrates the claimed non-identical portions. From a review of Appellants' Fig. 3, it is clear to us that such non-identical portions are also partly overlapped. Thus, it is our view that Appellants' Fig. 3 is showing non-identical portions that are "partly overlapped" with each other. Therefore, Yamazaki's disclosed partly overlapped pulses read on Appellants' non-identical portions.

Appellants also argue that "Yamazaki clearly teaches away from the claimed invention by advocating a two step irradiation" (Br. 6). We begin our analysis by noting that the Court of Appeals for the Federal Circuit has determined "[t]eaching away is irrelevant to anticipation." *Seachange International, Inc., v. C-Cor, Inc.*, 413 F.3d 1361, 1380, 75 USPQ2d 1385, 1398 (Fed. Cir. 2005), citing *Celeritas Tech., Ltd., v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522 (Fed. Cir. 1998); Bristol-*Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1378, 58 USPQ2d 1508, 1515 (Fed. Cir. 2001). Therefore, Appellants' reliance on Yamazaki's two step irradiation process to show disincentive in the cited reference to irradiate non-identical portions of the source/drain regions is misplaced. Such arguments are therefore not persuasive.

CONCLUSIONS

We conclude that Appellants have not shown that the Examiner erred in rejecting claims 1 and 11.

Thus, on this record claims 1 and 11 are not patentable.

DECISION

In view of the foregoing discussion, we affirm the Examiner's rejection of claims 1 and 11.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

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